

A STUDY ON SIGNIFICANCE OF p16INK4a AND Ki67 PROTEINS IN CERVICAL BIOPSIES

ABSTRACT

BACKGROUND

Cervical cancer is a leading cause of cancer deaths among women in India. Human papillomavirus is a prime cause of cervical cancer. E6 and E7 viral DNA by binding p53 and pRB, increases the expression of ki67 and p16INK4a proteins.

AIM

This study evaluates the expression of p16INK4a and ki67 proteins in cervical biopsies.

MATERIALS AND METHODS

Forty cases including chronic nonspecific cervicitis -14, LSIL-6, HSIL-6 and carcinoma -14 were subjected to immunohistochemical study with p16INK4a and ki67.

p16ink4a scoring were given as 0,1,2 and 3 when < 5%, 6 - 25%, 26 - 50% and > 50% cells showed nuclear and cytoplasmic positivity respectively. For ki67 in benign and premalignant lesions, no staining, lower 1/3rd, lower 2/3rd and > 2/3rd

of epithelium with nuclear positivity scored as 0,1,2 and 3 and in carcinoma, 0%, < 30%, 30 to 50% and >50% cells positivity as 0,1,2 and 3 respectively.

RESULTS

All benign cases were negative, 16.7% LSIL(score-1), 100% HSIL and carcinoma (score 2 and 3) showed p16INK4a positivity, showing graded increase in score from benign to malignant lesions (p value <0.05).

All benign cases (score 1), 100% LSIL(score-2), 100% HSIL and carcinoma(score 2 and 3) showed ki67 positivity, showing increase with proliferation (p value <0.05). p16INK4a and ki67 are positively correlated (p value=0.001)

CONCLUSION

p16INK4a and ki67 are useful biomarkers in cancer diagnosis and prognosis and distinction of reactive lesions from LSIL and HSIL.

KEYWORDS: cervical cancer, p16ink4a, ki67.